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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER	
DICKERSON, CHAD S	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/620,505	CASSIDY ET AL.	
	Examiner	Art Unit	
	Chad Dickerson	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 July 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *see attachment*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show reference numeral "153" in figures 20 and 21 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

- On page 8, line 27: the reference numeral "30" should be changed to -- 40 -- to reflect the user interface on figure 4.
- On page 12, lines 15 and 16: the reference numeral "117" should be -- 118 -- to reflect the reference numeral on figure 7.

Appropriate correction is required.

Claim Objections

3. Claim 32 is objected to because of the following informalities:

- On line 4, the word -- and -- needs to be inserted before the word "closing" in the phrase " each open trial pack closing each trail pack".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 2, 6, 11, 22, 23, 31 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re Claim 2: the claim recites the limitation "the least unused" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to be changed to -- a least unused --.

Re Claim 6: the claim recites the limitation "the steps of" in line 6. There is insufficient antecedent basis for this limitation in the claim. It is suggested to be changed to -- steps of --.

Re Claim 11: the claim recites the limitation "the steps of" in line 9. There is insufficient antecedent basis for this limitation in the claim. It is suggested to be changed to -- steps of --.

Re Claim 22: the claim recites the limitation "the least unused" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to be changed to -- a least unused --.

Re Claim 23: the claim recites the limitation "the first orientation" and "the second orientation" in lines 3 and 5. There is insufficient antecedent basis for this limitation in the claim. It is suggested to be changed to -- a first orientation -- and -- a second orientation --.

Re Claim 31: the claim recites the limitation "the steps of" in line 8. There is insufficient antecedent basis for this limitation in the claim. It is suggested to be changed to -- steps of --.

Re Claim 42: the claim recites the limitation "the least unused" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to be changed to -- a least unused --.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-17, 21-37 and 41-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Simon et al (US Pub No 2002/0040375).

Re claim 1: Simon et al discloses a method of organizing digital images on a page, comprising:

generating a first trial pack and a second trial pack, such that in the first trial pack the digital images are uniquely oriented as compared to the second trial pack (i.e. a trial layout is first determined when a layout of pictures is generated. Then another score layout is generated due to the rearrangement of the same photos in the previous layout. The cost function or white space scores are used to compare the two trial layouts and the scores are in relation to how much white space is left on the overall layout. The trial layout is considered as the trial pack; see figs. 6-10; paragraphs [0051]-[0061]);

comparing the trial packs (i.e. at step 240 in figure 7, the two trial layouts are compared to see which layout has a greater score in relation to the cost function or white space; see figs. 6-10; paragraphs [0057]-[0061]); and

selecting one of the trial packs based on the comparison (i.e. based on the comparison of the trial layouts and their associated scores, the trial layout with the lowest cost function or white space score is chosen; see figs. 6-10; paragraphs [0057]-[0061]).

Re claim 2: Simon et al discloses the method, wherein comparing comprises identifying a trial pack that leaves the least unused space (i.e. the goal of the optimization in the system is to find the page layout with the smallest or minimal cost function; see paragraph [0060]), and wherein selecting comprises selecting the identified trial pack (i.e. the new trail page layout of the previous trial page layout is chosen based on which layout has the lowest white space; see fig. 7; paragraphs [0060] and [0061]).

Re claim 3: Simon et al discloses a method of organizing digital images on a page, comprising:

defining a packing area (i.e. when the format of a page is selected in step 110, this is analogous to defining a packing area. In this step, the height and width of the page is specified in order to define where and within a format the images are to be placed on the page; see fig. 5 and 6; paragraph [0049] and [0050]);

if it will fit in the packing area, packing a digital image in the first orientation in a first trial pack (i.e. the amount of images placed on a page is determined automatically based on the layout and the amount of space that allows the images to achieve a spatial balance on the specified layout. If the image does not assist in creating a spatial balance or there is not enough room to fit an image on the page, that image is not chosen automatically to be placed on the page; see fig. 7 and 11-14; paragraphs [0049]-[0055]); and

if it will fit in the packing area, packing the digital image in the second orientation in a second trial pack (i.e. during the process that is illustrated in figure 7, the above process that occurs to the first or prior trial layout occurs to the new or the second trial layout. The new trial layout shows another orientation of the same images being used due to the specifications given by the aspect ration of the page format; see fig. 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 4: Simon et al discloses the method, further comprising:

identifying a largest image size that will fit in the packing area (i.e. although identifying the largest size is not specifically disclosed, it is performed by the device. With normalization, the largest sized image is isotropically scaled so that the shortest dimension of the image is equivalent to the other images used in the page format. The image with a certain size, which is identified, is the image that will create a spatial balance in the page format. This image can be the largest or the smallest size. The image will still be normalized to fit the image together with the other images to have the

page format displayed to the user in a balanced manner; see figs. 5-10; paragraph [0050]-[0055]); and

wherein packing the digital image in the first orientation includes, if a digital image of the identified size will fit in the first orientation, packing as many digital images of the identified size as possible in the first trial pack (i.e. the invention finds images of certain sizes that may fill the trial layout in an efficient manner. This may be a large or small sized image. The images chosen to fill the trial layout shown in figures 8-10 are either the same size or a different size and the feature of packing as many digital images of a certain size as possible in a certain orientation in a trial pack is performed; see figs. 5-10; paragraphs [0049]-[0055] and [0059]); and

wherein packing the digital image in the second orientation includes, if a digital image of the identified size will fit in the second orientation, packing as many digital images of the identified size as possible in the second trial pack (i.e. when comparing which trial layout is the most efficient in figure 7, the same process that occurred to the first or prior trial layout also occurs to the new or second trial layout. The second trial layout is another orientation of the same images and therefore, the above feature is also performed; see fig. 5-10; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 5: Simon et al the method, wherein:

identifying a largest size, comprises identifying, from a set of digital images, a largest image size that will fit in the packing area (i.e. although identifying the largest size is not specifically disclosed, it is performed by the device. With normalization, the

largest sized image is isotropically scaled so that the shortest dimension of the image is equivalent to the other images used in the page format. The image with a certain size, which is identified, is the image that will create a spatial balance in the page format. This image can be the largest or the smallest size. The image will still be normalized to fit the image together with the other images to have the page format displayed to the user in a balanced manner; see figs. 5-10; paragraph [0050]-[0055]); and

packing as many digital images of the identified size as possible comprises repeatedly packing digital images of the identified size in a given orientation until either another digital image of the identified size will not fit or no digital image of the identified size remains in the set (i.e. the invention finds images of certain sizes that may fill the trial layout in an efficient manner. This may be a large or small sized image. The images chosen to fill the trial layout shown in figures 8-10 are either the same size or a different size and the feature of packing as many digital images of a certain size as possible in a certain orientation in a trial pack is performed. The images are placed on the page layout until the images will not fit on the page in order to create a spatial balance. Also, because of the selection criteria listed in paragraph [0050], certain images do not remain since the images do not meet criteria set by the user. The other feature of no digital image of the identified size remains in the set is performed since the identified size may be associated with a time and date and if the image of the above time and date criteria does not remain, the above feature is performed; see figs. 5-10; paragraphs [0049]-[0055] and [0059]).

Re claim 6: Simon et al discloses a method of organizing digital images on a page, comprising

opening a trial pack as an empty page (i.e. figure 6 is an example of an empty trial layout. This shows a view of the page in which the pictures of figure 3 will be placed; see fig. 3 and 6; paragraphs [0038] and [0050]);

continuing, if possible, each open trial pack (i.e. the selection of the images placed on the trial layout are automatically selected based on the width, height or aspect ratio of the page. With the images chosen automatically, the images are continually placed on the page to fit the format chosen and normalizing of the images also takes place. The normalizing ensures that the images are distanced from one another in an equivalent manner to create a spatial balance between the pictures; see fig. 5; paragraphs [0049]-[0055]) and closing each trial pack that cannot be continued (i.e. once normalizing takes place, the images are placed to create a spatial balance. Once this is shown to the user for acceptance, the user has a choice to accept the layout or go through the page layout process again until an acceptable page layout is obtained. The layout process is completed or closed once the user is displayed the new layout; see fig. 5; paragraphs [0049]-[0055]); and

repeating the steps of continuing and closing until no trial pack remains open (i.e. when performing the process of comparing accepting a page layout, the process of continuing to apply images to certain layouts and closing the process of adding images because the layouts have the appropriate amount of images on a page is repeated until

a user decides to accept a displayed layout. At the point where the layout is displayed is a point in which the trial layout is closed; see fig. 5; paragraphs [0049]-[0055]).

Re claim 7: Simon et al discloses the method, wherein continuing, comprises:

defining a packing area (i.e. when the format of a page is selected in step 110, this is analogous to defining a packing area. In this step, the height and width of the page is specified in order to define where and within a format the images are to be placed on the page; see fig. 5 and 6; paragraph [0049] and [0050]);

upon determining that at least one digital image from the set that has yet to be packed in the open trial pack will fit in the packing area (i.e. in step 100, the digital images to be chosen are recognized to be in a database that stores the pictures. In step 120, images that are determined to be on the database that are not packed on a page layout, are selected to be placed on a page. This process can be performed manually or automatically. The images that are chosen in step 120 are images that are not placed on the page layout before that step has occurred; see fig. 5; paragraphs [0049]-[0055]);

identifying a largest size of a digital image remaining in the set that will fit in the packing area (i.e. although identifying the largest size is not specifically disclosed, it is performed by the device. With normalization, the largest sized image is isotropically scaled so that the shortest dimension of the image is equivalent to the other images used in the page format. The image with a certain size, which is identified, is the image that will create a spatial balance in the page format. This image can be the largest or

the smallest size. The image will still be normalized to fit the image together with the other images to have the page format displayed to the user in a balanced manner; see figs. 5-10; paragraph [0050]-[0055]);

if it will fit, packing a digital image of the identified size in a first orientation and continuing the open trial pack as a first child trial pack (i.e. the amount of images placed on a page is determined automatically based on the layout and the amount of space that allows the images to achieve a spatial balance on the specified layout. If the image does not assist in creating a spatial balance or there is not enough room to fit an image on the page, that image is not chosen automatically to be placed on the page. When the first image is chosen, another image is chosen to see if the first images together will create a spatial balance. If the images together create a spatial balance, other images are chosen until the presentation of an image will take the overall page layout out of a spatial balance. Then a score is created to represent the amount of space left on the page layout. The process described above is an example of continuing the trial layout as a child trial pack; see fig. 5, 7 and 11-14; paragraphs [0049]-[0055]); and

if it will fit, packing a digital image of the identified size in a second orientation and continuing the trial pack as a second child trial pack (i.e. during the process that is illustrated in figure 7, the above process that occurs to the first or prior trial layout occurs to the new or the second trial layout. The new trial layout shows another orientation of the same images being used due to the specifications given by the aspect ration of the page format. Also, the above process of the continuing of the trial layout as a first trial pack is the same for the second trial layout. The second trial layout is

continued as a second child trial pack; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 8: Simon et al discloses the method, wherein:

packing the identified digital image in the first orientation comprises packing as many digital images of the identified size as possible in the first orientation and continuing the open trial pack as a first child trial pack (i.e. the amount of images placed on a page is determined automatically based on the layout and the amount of space that allows the images to achieve a spatial balance on the specified layout. If the image does not assist in creating a spatial balance or there is not enough room to fit an image on the page, that image is not chosen automatically to be placed on the page. When the first image is chosen, another image is chosen to see if the first images together will create a spatial balance. If the images together create a spatial balance, other images are chosen until the presentation of an image will take the overall page layout out of a spatial balance. Then a score is created to represent the amount of space left on the page layout. The process described above is an example of continuing the trial layout as a child trial pack; see fig. 5, 7 and 11-14; paragraphs [0049]-[0055]); and

packing the identified digital image in the second orientation comprises packing as many digital images of the identified size as possible in the second orientation and continuing the open trial pack as a second child trial pack (i.e. during the process that is illustrated in figure 7, the above process that occurs to the first or prior trial layout occurs to the new or the second trial layout. The new trial layout shows another

orientation of the same images being used due to the specifications given by the aspect ration of the page format. Also, the above process of the continuing of the trial layout as a first trial pack is the same for the second trial layout. The second trial layout is continued as a second child trial pack; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 9: Simon et al discloses the method, wherein packing as many digital images of the identified size as possible comprises repeatedly packing digital images of the identified size in a given orientation until either another digital image of the identified size will not fit or no digital image of the identified size remains in the set (i.e. the invention finds images of certain sizes that may fill the trial layout in an efficient manner. This may be a large or small sized image. The images chosen to fill the trial layout shown in figures 8-10 are either the same size or a different size and the feature of packing as many digital images of a certain size as possible in a certain orientation in a trial pack is performed. The images are placed on the page layout until the images will not fit on the page in order to create a spatial balance. Also, because of the selection criteria listed in paragraph [0050], certain images do not remain since the images do not meet criteria set by the user. The other feature of no digital image of the identified size remains in the set is performed since the identified size may be associated with a time and date and if the image of the above time and date criteria does not remain, the above feature is performed; see figs. 5-10; paragraphs [0049]-[0055] and [0059]).

Re claim 10: Simon et al discloses the method, wherein closing comprises, for each open trial pack, closing that pack if no digital image from the set that has yet to be packed in the open trial pack will fit in the packing area (i.e. when performing the process of comparing and accepting a page layout, the process of continuing to apply images to certain layouts and closing the process of adding images because the layouts have the appropriate amount of images on a page is repeated until a user decides to accept a displayed layout. The trial layouts are closed when the images selected create a spatial balance and any more images added to the layout may disrupt the spatial balance in the page format chosen. Therefore, when a page layout cannot have any images added to the layout because any page added will not fit in order to keep a spatial balance, then the page layout is closed; see figs. 5 and 7; paragraphs [0049]-[0055]).

Re claim 11: Simon et al discloses a method of organizing digital images on a page, comprising:

selecting a set of digital images (i.e. in figure 5, the step 120 allows the images used to be arranged on a page format to be selected manually or automatically; see fig. 5; paragraphs [0049]-[0055]);

generating trial packs for the selected set of digital images (i.e. a trial layout is first determined when a layout of pictures is generated. Then another score layout is generated due to the rearrangement of the same photos in the previous layout. The cost function or white space scores are used to compare the two trial layouts and the

scores are in relation to how much white space is left on the overall layout. The trial layout is considered as the trial pack; see figs. 6-10; paragraphs [0051]-[0061]);

comparing the trial packs (i.e. at step 240 in figure 7, the two trial layouts are compared to see which layout has a greater score in relation to the cost function or white space; see figs. 6-10; paragraphs [0057]-[0061]);

selecting a trial pack based upon the comparison (i.e. based on the comparison of the trial layouts and their associated scores, the trial layout with the lowest cost function or white space score is chosen; see figs. 6-10; paragraphs [0057]-[0061]); and

determining if any of the digital images from the set were not used in the selected trial pack, and if any digital images are determined to not be used, selecting the unused digital images as the set of digital images (i.e. in step 100, the digital images to be chosen are recognized to be in a database that stores the pictures. In step 120, images that are determined to be on the database that are not packed on the current page layout, are selected to be placed on the page. This process can be performed manually or automatically. The images that are chosen in step 120 are images that are not placed on the page layout before that step has occurred; see fig. 5; paragraphs [0049]-[0055]) and repeating the steps of generating, comparing, selecting, and determining (i.e. when another trial layout is being compared to a previous trial layout, the steps of generating, comparing, selecting and determining are performed again or repeated. A trial layout may be repeated over several times, as illustrated in figure 5, until a desirable layout is displayed to the user; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 12: Simon et al discloses the method, wherein generating trial packs comprises:

opening a trial pack as an empty page (i.e. figure 6 is an example of an empty trial layout. This shows a view of the page in which the pictures of figure 3 will be placed; see fig. 3 and 6; paragraphs [0038] and [0050]);

continuing, if possible, each open trial pack (i.e. the selection of the images placed on the trial layout are automatically selected based on the width, height or aspect ratio of the page. With the images chosen automatically, the images are continually placed on the page to fit the format chosen and normalizing of the images also takes place. The normalizing ensures that the images are distanced from one another in an equivalent manner to create a spatial balance between the pictures; see fig. 5; paragraphs [0049]-[0055]) and closing each trial pack that cannot be continued (i.e. once normalizing takes place, the images are placed to create a spatial balance. Once this is shown to the user for acceptance, the user has a choice to accept the layout or go through the page layout process again until an acceptable page layout is obtained. The layout process is completed or closed once the user is displayed the new layout; see fig. 5; paragraphs [0049]-[0055]); and

repeating the steps of continuing and closing until no trial pack remains open (i.e. when performing the process of comparing accepting a page layout, the process of continuing to apply images to certain layouts and closing the process of adding images

because the layouts have the appropriate amount of images on a page is repeated until a user decides to accept a displayed layout; see fig. 5; paragraphs [0049]-[0055]).

Re claim 13: Simon et al discloses the method, wherein comparing comprises comparing closed trial packs (i.e. in figure 7, the trial layouts that have been closed or have been completed with all the possible images that can be placed on the page format, are compared to one another to see which trial layout is the most efficient and has the highest white space or cost function score; see fig. 7; paragraphs [0052]-[0063]).

Re claim 14: Simon et al discloses the method, wherein continuing, comprises:

defining a packing area (i.e. when the format of a page is selected in step 110, this is analogous to defining a packing area. In this step, the height and width of the page is specified in order to define where and within a format the images are to be placed on the page; see fig. 5 and 6; paragraph [0049] and [0050]);

upon determining that at least one digital image from the set that has yet to be packed in the open trial pack will fit in the packing area (i.e. in step 100, the digital images to be chosen are recognized to be in a database that stores the pictures. In step 120, images that are determined to be on the database that are not packed on a page layout, are selected to be placed on a page. This process can be performed manually or automatically. The images that are chosen in step 120 are images that are

not placed on the page layout before that step has occurred; see fig. 5; paragraphs [0049]-[0055]);

identifying a largest size of a digital image remaining in the set that will fit in the packing area (i.e. although identifying the largest size is not specifically disclosed, it is performed by the device. With normalization, the largest sized image is isotropically scaled so that the shortest dimension of the image is equivalent to the other images used in the page format. The image with a certain size, which is identified, is the image that will create a spatial balance in the page format. This image can be the largest or the smallest size. The image will still be normalized to fit the image together with the other images to have the page format displayed to the user in a balanced manner; see figs. 5-10; paragraph [0050]-[0055]);

if it will fit, packing a digital image of the identified size in a first orientation and continuing the open trial pack as a first child trial pack (i.e. the amount of images placed on a page is determined automatically based on the layout and the amount of space that allows the images to achieve a spatial balance on the specified layout. If the image does not assist in creating a spatial balance or there is not enough room to fit an image on the page, that image is not chosen automatically to be placed on the page. When the first image is chosen, another image is chosen to see if the first images together will create a spatial balance. If the images together create a spatial balance, other images are chosen until the presentation of an image will take the overall page layout out of a spatial balance. Then a score is created to represent the amount of space left on the

page layout. The process described above is an example of continuing the trial layout as a child trial pack; see fig. 5, 7 and 11-14; paragraphs [0049]-[0055]); and

if it will fit, packing a digital image of the identified size in a second orientation and continuing the trial pack as a second child trial pack (i.e. during the process that is illustrated in figure 7, the above process that occurs to the first or prior trial layout occurs to the new or the second trial layout. The new trial layout shows another orientation of the same images being used due to the specifications given by the aspect ration of the page format. Also, the above process of the continuing of the trial layout as a first trial pack is the same for the second trial layout. The second trial layout is continued as a second child trial pack; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 15: Simon et al discloses the method, wherein:

packing the identified digital image in the first orientation comprises packing as many digital images of the identified size as possible in the first orientation and continuing the open trial pack as a first child trial pack (i.e. the amount of images placed on a page is determined automatically based on the layout and the amount of space that allows the images to achieve a spatial balance on the specified layout. If the image does not assist in creating a spatial balance or there is not enough room to fit an image on the page, that image is not chosen automatically to be placed on the page. When the first image is chosen, another image is chosen to see if the first images together will create a spatial balance. If the images together create a spatial balance, other images

are chosen until the presentation of an image will take the overall page layout out of a spatial balance. Then a score is created to represent the amount of space left on the page layout. The process described above is an example of continuing the trial layout as a child trial pack; see fig. 5, 7 and 11-14; paragraphs [0049]-[0055]); and

packing the identified digital image in the second orientation comprises packing as many digital images of the identified size as possible in the second orientation and continuing the open trial pack as a second child trial pack (i.e. during the process that is illustrated in figure 7, the above process that occurs to the first or prior trial layout occurs to the new or the second trial layout. The new trial layout shows another orientation of the same images being used due to the specifications given by the aspect ration of the page format. Also, the above process of the continuing of the trial layout as a first trial pack is the same for the second trial layout. The second trial layout is continued as a second child trial pack; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 16: Simon et al discloses the method, wherein packing as many digital images of the identified size as possible comprises repeatedly packing digital images of the identified size in a given orientation until either another digital image of the identified size will not fit or no digital image of the identified size remains in the set (i.e. the invention finds images of certain sizes that may fill the trial layout in an efficient manner. This may be a large or small sized image. The images chosen to fill the trial layout shown in figures 8-10 are either the same size or a different size and the feature of

packing as many digital images of a certain size as possible in a certain orientation in a trial pack is performed. The images are placed on the page layout until the images will not fit on the page in order to create a spatial balance. Also, because of the selection criteria listed in paragraph [0050], certain images do not remain since the images do not meet criteria set by the user. The other feature of no digital image of the identified size remains in the set is performed since the identified size may be associated with a time and date and if the image of the above time and date criteria does not remain, the above feature is performed; see figs. 5-10; paragraphs [0049]-[0055] and [0059]).

Re claim 17: Simon et al discloses the method, wherein closing comprises, for each open trial pack, closing that pack if no digital image from the set that has yet to be packed in the open trial pack will fit in the packing area (i.e. when performing the process of comparing and accepting a page layout, the process of continuing to apply images to certain layouts and closing the process of adding images because the layouts have the appropriate amount of images on a page is repeated until a user decides to accept a displayed layout. The trial layouts are closed when the images selected create a spatial balance and any more images added to the layout may disrupt the spatial balance in the page format chosen. Therefore, when a page layout cannot have any images added to the layout because any page added will not fit in order to keep a spatial balance, then the page layout is closed; see figs. 5 and 7; paragraphs [0049]-[0055]).

Re claim 21: Simon et al discloses a method of organizing digital images on a page:

generating a first trial pack and a second trial pack, such that in the first trial pack digital images are uniquely oriented as compared to the second trial pack (i.e. a trial layout is first determined when a layout of pictures is generated. Then another score layout is generated due to the rearrangement of the same photos in the previous layout. The rearrangement creates a distinction between the two layouts. The cost function or white space scores are used to compare the two trial layouts and the scores are in relation to how much white space is left on the overall layout. The trial layout is considered as the trial pack; see figs. 6-10; paragraphs [0051]-[0061]);

comparing the trial packs (i.e. at step 240 in figure 7; the two trial layouts are compared to see which layout has a greater score in relation to the cost function or white space; see figs. 6-10; paragraphs [0057]-[0061]); and

selecting one of the trial packs based on the comparison (i.e. based on the comparison of the trial layouts and their associated scores, the trial layout with the lowest cost function or white space score is chosen; see figs. 6-10; paragraphs [0057]-[0061]).

Re claim 22: Simon et al discloses the medium, wherein the instructions for comparing include instructions for identifying a trial pack that leaves the least unused space, and wherein the instructions for selecting include instructions for selecting the identified trial pack (i.e. the goal of the optimization in the system is to find the page layout with the smallest or minimal cost function; see paragraph [0060]), and wherein selecting

comprises selecting the identified trial pack (i.e. the new trail page layout of the previous trial page layout is chosen based on which layout has the lowest white space. A processor is present in the system to execute the method of the present invention; see fig. 1 and 7; paragraphs [0047], [0060] and [0061]).

Re claim 23: Simon et al discloses a computer readable medium having instructions for:

defining a packing area (i.e. when the format of a page is selected in step 110, this is analogous to defining a packing area. In this step, the height and width of the page is specified in order to define where and within a format the images are to be placed on the page; see fig. 5 and 6; paragraph [0049] and [0050]);

if it will fit in the packing area, packing a digital image in the first orientation in a first trial pack (i.e. the amount of images placed on a page is determined automatically based on the layout and the amount of space that allows the images to achieve a spatial balance on the specified layout. If the image does not assist in creating a spatial balance or there is not enough room to fit an image on the page, that image is not chosen automatically to be placed on the page; see fig. 7 and 11-14; paragraphs [0049]-[0055]); and

if it will fit in the packing area, packing the digital image in the second orientation in a second trial pack (i.e. during the process that is illustrated in figure 7, the above process that occurs to the first or prior trial layout occurs to the new or the second trial layout. The new trial layout shows another orientation of the same images being used due to the specifications given by the aspect ration of the page format. Also, when the

user uses the process in figure 5, a second trial pack is developed in a second orientation that is appropriate to pack a certain amount of images in the second layout; see figs. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 24: Simon et al discloses the medium, having further instruction for:

identifying a largest image size that will fit in the packing area (i.e. although identifying the largest size is not specifically disclosed, it is performed by the device. With normalization, the largest sized image is isotropically scaled so that the shortest dimension of the image is equivalent to the other images used in the page format. The image with a certain size, which is identified, is the image that will create a spatial balance in the page format. This image can be the largest or the smallest size. The image will still be normalized to fit the image together with the other images to have the page format displayed to the user in a balanced manner; see figs. 5-10; paragraph [0050]-[0055]); and

wherein the instructions for packing the digital image in the first orientation include instructions for, if a digital image of the identified size will fit in the first orientation, packing as many digital images of the identified size as possible in the first trial pack (i.e. the invention finds images of certain sizes that may fill the trial layout in an efficient manner. This may be a large or small sized image. The images chosen to fill the trial layout shown in figures 8-10 are either the same size or a different size and the feature of packing as many digital images of a certain size as possible in a certain

orientation in a trial pack is performed; see figs. 5-10; paragraphs [0049]-[0055] and [0059]); and

wherein the instructions for packing the digital image in the second orientation include instructions for, if a digital image of the identified size will fit in the second orientation, packing as many digital images of the identified size as possible in the second trial pack (i.e. when comparing which trial layout is the most efficient in figure 7, the same process that occurred to the first or prior trial layout also occurs to the new or second trial layout. The second trial layout is another orientation of the same images and therefore, the above feature is also performed; see fig. 5-10; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 25: Simon et al discloses the medium, wherein the instructions for:

identifying a largest size, comprises identifying, from a set of digital images, a largest image size that will fit in the packing area (i.e. although identifying the largest size is not specifically disclosed, it is performed by the device. With normalization, the largest sized image is isotropically scaled so that the shortest dimension of the image is equivalent to the other images used in the page format. The image with a certain size, which is identified, is the image that will create a spatial balance in the page format. This image can be the largest or the smallest size. The image will still be normalized to fit the image together with the other images to have the page format displayed to the user in a balanced manner; see figs. 5-10; paragraph [0050]-[0055]); and

packing as many digital images of the identified size as possible comprises repeatedly packing digital images of the identified size in a given orientation until either another digital image of the identified size will not fit or no digital image of the identified size remains in the set (i.e. the invention finds images of certain sizes that may fill the trial layout in an efficient manner. This may be a large or small sized image. The images chosen to fill the trial layout shown in figures 8-10 are either the same size or a different size and the feature of packing as many digital images of a certain size as possible in a certain orientation in a trial pack is performed. The images are placed on the page layout until the images will not fit on the page in order to create a spatial balance. Also, because of the selection criteria listed in paragraph [0050], certain images do not remain since the images do not meet criteria set by the user. The other feature of no digital image of the identified size remains in the set is performed since the identified size may be associated with a time and date and if the image of the above time and date criteria does not remain, the above feature is performed; see figs. 5-10; paragraphs [0049]-[0055] and [0059]).

Re claim 26: Simon et al discloses a method of organizing digital images on a page:

selecting a set of digital images (i.e. in figure 5, the step 120 allows the images used to be arranged on a page format to be selected manually or automatically; see fig. 5; paragraphs [0049]-[0055]);

opening a trial pack as an empty page (i.e. figure 6 is an example of an empty trial layout. This shows a view of the page in which the pictures of figure 3 will be placed; see fig. 3 and 6; paragraphs [0038] and [0050]);

continuing, if possible, each open trial pack (i.e. the selection of the images placed on the trial layout are automatically selected based on the width, height or aspect ratio of the page. With the images chosen automatically, the images are continually placed on the page to fit the format chosen and normalizing of the images also takes place. The normalizing ensures that the images are distanced from one another in an equivalent manner to create a spatial balance between the pictures; see fig. 5; paragraphs [0049]-[0055]) and closing each trial pack that cannot be continued (i.e. once normalizing takes place, the images are placed to create a spatial balance. Once this is shown to the user for acceptance, the user has a choice to accept the layout or go through the page layout process again until an acceptable page layout is obtained. The layout process is completed or closed once the user is displayed the new layout; see fig. 5; paragraphs [0049]-[0055]); and

repeating the instructions for continuing and closing until no trial pack remains open (i.e. when performing the process of comparing accepting a page layout, the process of continuing to apply images to certain layouts and closing the process of adding images because the layouts have the appropriate amount of images on a page is repeated until a user decides to accept a displayed layout; see fig. 5; paragraphs [0049]-[0055]).

Re claim 27: Simon et al discloses the medium, wherein the instructions for continuing, include instructions for:

defining a packing area (i.e. when the format of a page is selected in step 110, this is analogous to defining a packing area. In this step, the height and width of the page is specified in order to define where and within a format the images are to be placed on the page; see fig. 5 and 6; paragraph [0049] and [0050]);

upon determining that at least one digital image from the set that has yet to be packed in the open trial pack will fit in the packing area (i.e. in step 100, the digital images to be chosen are recognized to be in a database that stores the pictures. In step 120, images that are determined to be on the database that are not packed on a page layout, are selected to be placed on a page. This process can be performed manually or automatically. The images that are chosen in step 120 are images that are not placed on the page layout before that step has occurred; see fig. 5; paragraphs [0049]-[0055]);

identifying a largest size of a digital image remaining in the set that will fit in the packing area (i.e. although identifying the largest size is not specifically disclosed, it is performed by the device. With normalization, the largest sized image is isotropically scaled so that the shortest dimension of the image is equivalent to the other images used in the page format. The image with a certain size, which is identified, is the image that will create a spatial balance in the page format. This image can be the largest or the smallest size. The image will still be normalized to fit the image together with the

other images to have the page format displayed to the user in a balanced manner; see figs. 5-10; paragraph [0050]-[0055]);

if it will fit, packing a digital image of the identified size in a first orientation and continuing the open trial pack as a first child trial pack (i.e. the amount of images placed on a page is determined automatically based on the layout and the amount of space that allows the images to achieve a spatial balance on the specified layout. If the image does not assist in creating a spatial balance or there is not enough room to fit an image on the page, that image is not chosen automatically to be placed on the page. When the first image is chosen, another image is chosen to see if the first images together will create a spatial balance. If the images together create a spatial balance, other images are chosen until the presentation of an image will take the overall page layout out of a spatial balance. Then a score is created to represent the amount of space left on the page layout. The process described above is an example of continuing the trial layout as a child trial pack; see fig. 5, 7 and 11-14; paragraphs [0049]-[0055]); and

if it will fit, packing a digital image of the identified size in a second orientation and continuing the trial pack as a second child trial pack (i.e. during the process that is illustrated in figure 7, the above process that occurs to the first or prior trial layout occurs to the new or the second trial layout. The new trial layout shows another orientation of the same images being used due to the specifications given by the aspect ration of the page format. Also, the above process of the continuing of the trial layout as a first trial pack is the same for the second trial layout. The second trial layout is

continued as a second child trial pack; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 28: Simon et al discloses the medium, wherein the instructions for:

packing the identified digital image in the first orientation include instructions for packing as many digital images of the identified size as possible in the first orientation and continuing the open trial pack as a first child trial pack (i.e. the amount of images placed on a page is determined automatically based on the layout and the amount of space that allows the images to achieve a spatial balance on the specified layout. If the image does not assist in creating a spatial balance or there is not enough room to fit an image on the page, that image is not chosen automatically to be placed on the page. When the first image is chosen, another image is chosen to see if the first images together will create a spatial balance. If the images together create a spatial balance, other images are chosen until the presentation of an image will take the overall page layout out of a spatial balance. Then a score is created to represent the amount of space left on the page layout. The process described above is an example of continuing the trial layout as a child trial pack; see fig. 5, 7 and 11-14; paragraphs [0049]-[0055]); and

packing the identified digital image in the second orientation include instructions for packing as many digital images of the identified size as possible in the second orientation and continuing the open trial pack as a second child trial pack (i.e. during the process that is illustrated in figure 7, the above process that occurs to the first or prior

trial layout occurs to the new or the second trial layout. The new trial layout shows another orientation of the same images being used due to the specifications given by the aspect ration of the page format. Also, the above process of the continuing of the trial layout as a first trial pack is the same for the second trial layout. The second trial layout is continued as a second child trial pack; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 29: Simon et al discloses the medium, wherein the instructions for packing as many digital images of the identified size as possible include instructions for repeatedly packing digital images of the identified size in a given orientation until either another digital image of the identified size will not fit or no digital image of the identified size remains in the set (i.e. the invention finds images of certain sizes that may fill the trial layout in an efficient manner. This may be a large or small sized image. The images chosen to fill the trial layout shown in figures 8-10 are either the same size or a different size and the feature of packing as many digital images of a certain size as possible in a certain orientation in a trial pack is performed. The images are placed on the page layout until the images will not fit on the page in order to create a spatial balance. Also, because of the selection criteria listed in paragraph [0050], certain images do not remain since the images do not meet criteria set by the user. The other feature of no digital image of the identified size remains in the set is performed since the identified size may be associated with a time and date and if the image of the above time and

date criteria does not remain, the above feature is performed; see figs. 5-10; paragraphs [0049]-[0055] and [0059]).

Re claim 30: Simon et al discloses the medium, wherein the instructions for closing include instructions for, for each open trial pack, closing that pack if no digital image from the set that has yet to be packed in the open trial pack will fit in the packing area (i.e. when performing the process of comparing and accepting a page layout, the process of continuing to apply images to certain layouts and closing the process of adding images because the layouts have the appropriate amount of images on a page is repeated until a user decides to accept a displayed layout. The trial layouts are closed when the images selected create a spatial balance and any more images added to the layout may disrupt the spatial balance in the page format chosen. Therefore, when a page layout cannot have any images added to the layout because any page added will not fit in order to keep a spatial balance, then the page layout is closed; see figs. 5 and 7; paragraphs [0049]-[0055]).

Re claim 31: Simon et al discloses a method of organizing digital images on a page for

selecting a set of digital images (i.e. in figure 5, the step 120 allows the images used to be arranged on a page format to be selected manually or automatically; see fig. 5; paragraphs [0049]-[0055]);

generating trial packs for the selected set of digital images (i.e. a trial layout is first determined when a layout of pictures is generated. Then another score layout is

generated due to the rearrangement of the same photos in the previous layout. The cost function or white space scores are used to compare the two trial layouts and the scores are in relation to how much white space is left on the overall layout. The trial layout is considered as the trial pack; see figs. 6-10; paragraphs [0051]-[0061]);

comparing the trial packs (i.e. at step 240 in figure 7, the two trial layouts are compared to see which layout has a greater score in relation to the cost function or white space; see figs. 6-10; paragraphs [0057]-[0061]);

selecting a trial pack based upon the comparison (i.e. based on the comparison of the trial layouts and their associated scores, the trial layout with the lowest cost function or white space score is chosen; see figs. 6-10; paragraphs [0057]-[0061]); and

determining if any of the digital images from the set were not used in the selected trial pack, and if any digital images are determined to not be used, selecting the unused digital images as the set of digital images (i.e. in step 100, the digital images to be chosen are recognized to be in a database that stores the pictures. In step 120, images that are determined to be on the database that are not packed on a page layout, are selected to be placed on a page. This process can be performed manually or automatically. The images that are chosen in step 120 are images that are not placed on the page layout before that step has occurred; see fig. 5; paragraphs [0049]-[0055]) and repeating the steps of generating, comparing, selecting, and determining (i.e. when another trial layout is being compared to a previous trial layout, the steps of generating, comparing, selecting and determining are performed again or repeated. A trial layout

may be repeated over several times, as illustrated in figure 5, until a desirable layout is displayed to the user; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 32: Simon et al discloses Simon et al discloses a method of organizing digital images on a page:

opening a trial pack as an empty page (i.e. figure 6 is an example of an empty trial layout. This shows a view of the page in which the pictures of figure 3 will be placed; see fig. 3 and 6; paragraphs [0038] and [0050]);

continuing, if possible, each open trial pack (i.e. the selection of the images placed on the trial layout are automatically selected based on the width, height or aspect ratio of the page. With the images chosen automatically, the images are continually placed on the page to fit the format chosen and normalizing of the images also takes place. The normalizing ensures that the images are distanced from one another in an equivalent manner to create a spatial balance between the pictures; see fig. 5; paragraphs [0049]-[0055]) and closing each trial pack that cannot be continued (i.e. once normalizing takes place, the images are placed to create a spatial balance. Once this is shown to the user for acceptance, the user has a choice to accept the layout or go through the page layout process again until an acceptable page layout is obtained. The layout process is completed or closed once the user is displayed the new layout; see fig. 5; paragraphs [0049]-[0055]); and

repeating the instruction for continuing and closing until no trial pack remains open (i.e. when performing the process of comparing accepting a page layout, the

process of continuing to apply images to certain layouts and closing the process of adding images because the layouts have the appropriate amount of images on a page is repeated until a user decides to accept a displayed layout; see fig. 5; paragraphs [0049]-[0055]).

Re claim 33: Simon et al discloses the medium, wherein the instructions for comparing include instructions for comparing closed trial packs (i.e. in figure 7, the trial layouts that have been closed or have been completed with all the possible images that can be placed on the page format, are compared to one another to see which trial layout is the most efficient and has the highest white space or cost function score; see fig. 7; paragraphs [0052]-[0063]).

Re claim 34: Simon et al discloses the medium, wherein the instructions for continuing, include instructions for:

defining a packing area (i.e. when the format of a page is selected in step 110, this is analogous to defining a packing area. In this step, the height and width of the page is specified in order to define where and within a format the images are to be placed on the page; see fig. 5 and 6; paragraph [0049] and [0050]);

upon determining that at least one digital image from the set that has yet to be packed in the open trial pack will fit in the packing area (i.e. in step 100, the digital images to be chosen are recognized to be in a database that stores the pictures. In step 120, images that are determined to be on the database that are not packed on a

page layout, are selected to be placed on a page. This process can be performed manually or automatically. The images that are chosen in step 120 are images that are not placed on the page layout before that step has occurred; see fig. 5; paragraphs [0049]-[0055]);

identifying a largest size of a digital image remaining in the set that will fit in the packing area (i.e. although identifying the largest size is not specifically disclosed, it is performed by the device. With normalization, the largest sized image is isotropically scaled so that the shortest dimension of the image is equivalent to the other images used in the page format. The image with a certain size, which is identified, is the image that will create a spatial balance in the page format. This image can be the largest or the smallest size. The image will still be normalized to fit the image together with the other images to have the page format displayed to the user in a balanced manner; see figs. 5-10; paragraph [0050]-[0055]);

if it will fit, packing a digital image of the identified size in a first orientation and continuing the open trial pack as a first child trial pack (i.e. the amount of images placed on a page is determined automatically based on the layout and the amount of space that allows the images to achieve a spatial balance on the specified layout. If the image does not assist in creating a spatial balance or there is not enough room to fit an image on the page, that image is not chosen automatically to be placed on the page. When the first image is chosen, another image is chosen to see if the first images together will create a spatial balance. If the images together create a spatial balance, other images are chosen until the presentation of an image will take the overall page layout out of a

spatial balance. Then a score is created to represent the amount of space left on the page layout. The process described above is an example of continuing the trial layout as a child trial pack; see fig. 5, 7 and 11-14; paragraphs [0049]-[0055]); and

if it will fit, packing a digital image of the identified size in a second orientation and continuing the trial pack as a second child trial pack (i.e. during the process that is illustrated in figure 7, the above process that occurs to the first or prior trial layout occurs to the new or the second trial layout. The new trial layout shows another orientation of the same images being used due to the specifications given by the aspect ration of the page format. Also, the above process of the continuing of the trial layout as a first trial pack is the same for the second trial layout. The second trial layout is continued as a second child trial pack; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 35: Simon et al discloses the medium, wherein:

the instructions for packing the identified digital image in the first orientation include instructions for packing as many digital images of the identified size as possible in the first orientation and continuing the open trial pack as a first child trial pack (i.e. the amount of images placed on a page is determined automatically based on the layout and the amount of space that allows the images to achieve a spatial balance on the specified layout. If the image does not assist in creating a spatial balance or there is not enough room to fit an image on the page, that image is not chosen automatically to be placed on the page. When the first image is chosen, another image is chosen to see if

the first images together will create a spatial balance. If the images together create a spatial balance, other images are chosen until the presentation of an image will take the overall page layout out of a spatial balance. Then a score is created to represent the amount of space left on the page layout. The process described above is an example of continuing the trial layout as a child trial pack. The invention has a processor that performs the method of the invention; see fig. 1, 5, 7 and 11-14; paragraphs [0047], [0049]-[0055]); and

the instructions for packing the identified digital image in the second orientation include instructions for packing as many digital images of the identified size as possible in the second orientation and continuing the open trial pack as a second child trial pack (i.e. during the process that is illustrated in figure 7, the above process that occurs to the first or prior trial layout occurs to the new or the second trial layout. The new trial layout shows another orientation of the same images being used due to the specifications given by the aspect ration of the page format. Also, the above process of the continuing of the trial layout as a first trial pack is the same for the second trial layout. The second trial layout is continued as a second child trial pack; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 36: Simon et al discloses the medium, wherein the instructions for packing as many digital images of the identified size as possible include instructions for repeatedly packing digital images of the identified size in a given orientation until either another digital image of the identified size will not fit or no digital image of the identified size

remains in the set (i.e. the invention finds images of certain sizes that may fill the trial layout in an efficient manner. This may be a large or small sized image. The images chosen to fill the trial layout shown in figures 8-10 are either the same size or a different size and the feature of packing as many digital images of a certain size as possible in a certain orientation in a trial pack is performed. The images are placed on the page layout until the images will not fit on the page in order to create a spatial balance. Also, because of the selection criteria listed in paragraph [0050], certain images do not remain since the images do not meet criteria set by the user. The other feature of no digital image of the identified size remains in the set is performed since the identified size may be associated with a time and date and if the image of the above time and date criteria does not remain, the above feature is performed; see figs. 5-10; paragraphs [0049]-[0055] and [0059]).

Re claim 37: Simon et al discloses the medium, wherein the instructions for closing include instructions for, for each open trial pack, closing that pack if no digital image from the set that has yet to be packed in the open trial pack will fit in the packing area (i.e. when performing the process of comparing and accepting a page layout, the process of continuing to apply images to certain layouts and closing the process of adding images because the layouts have the appropriate amount of images on a page is repeated until a user decides to accept a displayed layout. The trial layouts are closed when the images selected create a spatial balance and any more images added to the layout may disrupt the spatial balance in the page format chosen. Therefore,

when a page layout cannot have any images added to the layout because any page added will not fit in order to keep a spatial balance, then the page layout is closed; see figs. 5 and 7; paragraphs [0049]-[0055]).

Re claim 41: Simon et al discloses a method of organizing digital images on a page, comprising:

a trial pack generator operable to generate a first trial pack and a second trial pack, such that digital images in the first trial pack are uniquely oriented as compared to digital images in the second trial pack (i.e. a trial layout is first determined when a layout of pictures is generated. Then another layout is generated due to the rearrangement of the same photos in the previous layout. The cost function or white space scores are used to compare the two trial layouts and the scores are in relation to how much white space is left on the overall layout. The trial layout is considered as the trial pack. Both are uniquely oriented since they have a differing arrangement. Although a trial pack generator is not specifically disclosed, the feature is performed; see figs. 6-10; paragraphs [0051]-[0061]); and

a pack selector operable to compare the trial packs and select one of the trial packs based on the comparison (i.e. at step 240 in figure 7, the two trial layouts are compared to see which layout has a greater score in relation to the cost function or white space. Based on the comparison of the trial layouts and their associated scores, the trial layout with the lowest cost function or white space score is chosen. Although a pack selector is not specifically disclose, the function is performed. Also, with the layout

having the ability to be chosen manually, the feature of a pack selector is believed to be performed by the manual function of the invention; see figs. 6-10; paragraphs [0057]-[0061]).

Re claim 42: Simon et al discloses the packing module, wherein the pack selector is operable to identify a trial pack that leaves the least unused space and to select the identified trial pack (i.e. the goal of the optimization in the system is to find the page layout with the smallest or minimal cost function; see paragraph [0060]), and wherein selecting comprises selecting the identified trial pack (i.e. the new trail page layout of the previous trial page layout is chosen based on which layout has the lowest white space; see fig. 7; paragraphs [0060] and [0061]).

Re claim 43: Simon et al discloses a method of organizing digital images on a page, comprising

a trial pack generator operable to generate trial packs for the set of digital images (i.e. a trial layout is first determined when a layout of pictures is generated. Then another score layout is generated due to the rearrangement of the same photos in the previous layout. The cost function or white space scores are used to compare the two trial layouts and the scores are in relation to how much white space is left on the overall layout. The trial layout is considered as the trial pack. Although a trial pack generator is not specifically disclosed, the feature is performed; see figs. 6-10; paragraphs [0051]-[0061]);

a pack selector operable to compare generated trial packs generated by the trial pack generator, to select a trial pack based upon the comparison (i.e. based on the comparison of the trial layouts and their associated scores, the trial layout with the lowest cost function or white space score is chosen automatically. Although a pack selector is not specifically disclosed, the feature is performed. Also, with the layout having the ability to be chosen manually, the feature of a pack selector is believed to be performed by the manual function of the invention; see figs. 6-10; paragraphs [0057]-[0061]); and,

until all digital image from the set are used in one of one or more selected trial packs, to direct the trial pack generator to generate new trial packs for any digital images not used in a selected trial pack (i.e. in step 100, the digital images to be chosen are recognized to be in a database that stores the pictures. In step 120, images that are determined to be on the database that are not packed on a page layout, are selected to be placed on a page. This process can be performed manually or automatically. The images that are chosen in step 120 are images that are not placed on the page layout before that step has occurred. Also in figure 7, other trial layouts are generated and images that are not in the presently generated layout are then placed on that layout to compare the current layout to a previous layout; see fig. 5 and 7; paragraphs [0049]-[0063]).

Re claim 44: Simon et al discloses the system, wherein the trial pack generator includes:

a packing area selector operable to define a packing area (i.e. when the format of a page is selected in step 110, this is analogous to defining a packing area. In this step, the height and width of the page is specified in order to define where and within a format the images are to be placed on the page. Although a packing area selector is not specifically disclosed, the function of the device is performed. Also, since the PC (12) has several input devices, these may function as the packing area selector; see fig. 5 and 6; paragraph [0049] and [0050]);

a packager operable to open a trial pack as an empty page (i.e. figure 6 is an example of an empty trial layout. This shows a view of the page in which the pictures of figure 3 will be placed; see fig. 3 and 6; paragraphs [0038] and [0050]) and, using packing areas defined by the packing area selector, to repeatedly continue, if possible, each open trial pack (i.e. the selection of the images placed on the trial layout are automatically selected based on the width, height or aspect ratio of the page. With the images chosen automatically, the images are continually placed on the page to fit the format chosen and normalizing of the images also takes place. The normalizing ensures that the images are distanced from one another in an equivalent manner to create a spatial balance between the pictures; see fig. 5; paragraphs [0049]-[0055]) and to close each open trial pack that cannot be continued until no trial pack remains open (i.e. once normalizing takes place, the images are placed to create a spatial balance. Once this is shown to the user for acceptance, the user has a choice to accept the layout or go through the page layout process again until an acceptable page layout is

obtained. The layout process is completed or closed once the user is displayed the new layout; see fig. 5; paragraphs [0049]-[0055]).

Re claim 45: Simon et al discloses the system, wherein:

the pack generator includes a coordinator operable to identify from the set a largest size of a digital image remaining in the set that will fit in a space identified by the packing area selector (i.e. although identifying the largest size by the pack generator coordinator is not specifically disclosed, it is performed by the device. With normalization, the largest sized image is isotropically scaled so that the shortest dimension of the image is equivalent to the other images used in the page format. The image with a certain size, which is identified, is the image that will create a spatial balance in the page format. This image can be the largest or the smallest size. The image will still be normalized to fit the image together with the other images to have the page format displayed to the user in a balanced manner; see figs. 5-10; paragraph [0050]-[0055]); and

the packager is operable to continue an open trial pack by (i.e. although a packager is not disclosed to continue an open trial pack, it is clear that the trial layout automatically finds images that will best fit the space on the page format in order to offer the best spatial balance on the page; see fig. 5; [0049]-[0055]);

if it will fit, packing a digital image of the identified size in a first orientation in an packing area and continuing the open trial pack as a first child trial pack (i.e. the amount of images placed on a page is determined automatically based on the layout and the

amount of space that allows the images to achieve a spatial balance on the specified layout. If the image does not assist in creating a spatial balance or there is not enough room to fit an image on the page, that image is not chosen automatically to be placed on the page. When the first image is chosen, another image is chosen to see if the first images together will create a spatial balance. If the images together create a spatial balance, other images are chosen until the presentation of an image will take the overall page layout out of a spatial balance. Then a score is created to represent the amount of space left on the page layout. The process described above is an example of continuing the trial layout as a child trial pack; see fig. 5, 7 and 11-14; paragraphs [0049]-[0055]); and

if it will fit, packing a digital image of the identified size in a second orientation and continuing the trial pack as a second child trial pack (i.e. during the process that is illustrated in figure 7, the above process that occurs to the first or prior trial layout occurs to the new or the second trial layout. The new trial layout shows another orientation of the same images being used due to the specifications given by the aspect ration of the page format. Also, the above process of the continuing of the trial layout as a first trial pack is the same for the second trial layout. The second trial layout is continued as a second child trial pack; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 46: Simon et al discloses the system, wherein the packager is operable to, for each open trial pack, close that trial pack if no digital image from the set that has yet to

be packed in the open trial pack will fit in the packing area (i.e. when performing the process of comparing and accepting a page layout, the process of continuing to apply images to certain layouts and closing the process of adding images because the layouts have the appropriate amount of images on a page is repeated until a user decides to accept a displayed layout. The trial layouts are closed when the images selected create a spatial balance and any more images added to the layout may disrupt the spatial balance in the page format chosen. Therefore, when a page layout cannot have any images added to the layout because any page added will not fit in order to keep a spatial balance, then the page layout is closed; see figs. 5 and 7; paragraphs [0049]-[0055]).

Re claim 47: Simon et al discloses the system, wherein the pack selector is operable to, once all open trial packs have been closed, compare the closed trial packs and select one of the closed trial packs based on the comparison (i.e. it is clearly illustrated in figure 7 that when a layout of images are complete, another completed or closed layout of images is arranged and scored to be compared to the previous layout completed. Based on the comparison of the scores or the user's preference if chosen manually, the appropriate trial layout is chosen; see fig. 5 and 7; paragraphs [0049]-[0055] and [0059]-[0063]).

Re claim 48: Simon et al discloses a method of organizing digital images on a page, comprising:

a means for generating a first trial pack (i.e. figure 5 is an illustration of the method when a trial layout is generated and displayed to the user; see fig. 5 and 6; paragraphs [0049]-[0055]);

a means for generating a second trial pack, such that digital images in the second trial pack are uniquely oriented as compared to digital images in the first trial pack (i.e. a trial layout is first determined when a layout of pictures is generated. Then another score layout is generated due to the rearrangement of the same photos in the previous layout, which creates another trial layout. The cost function or white space scores are used to compare the two trial layouts and the scores are in relation to how much white space is left on the overall layout. The trial layout is considered as the trial pack; see figs. 6-10; paragraphs [0051]-[0061]);

a means for comparing the trial packs (i.e. at step 240 in figure 7, the two trial layouts are compared to see which layout has a greater score in relation to the cost function or white space; see figs. 6-10; paragraphs [0057]-[0061]); and

a means for selecting one of the trial packs based on the comparison (i.e. based on the comparison of the trial layouts and their associated scores, the trial layout with the lowest cost function or white space score is chosen; see figs. 6-10; paragraphs [0057]-[0061]).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 18, 19 and 38, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon et al in view of Shields (US Pub No 2003/0163786).

Re claim 18: The teachings of Simon et al are disclosed above.

However, Simon et al fails to teach the method, wherein defining a packing area comprises identifying a geometry of a packed space and defining a packing area according the geometry of the packed space.

However, this is well known in the art as evidenced by Shields. Shields disclose defining a packing area comprises identifying a geometry of a packed space (i.e. the system checks to see if a region of sufficient size exists for the placement of an image. Any type of possible shape that is represented in figure 2 is recognized to see if the next available image can fit in the shape shown; see fig. 2; paragraphs [0012]-[0015]) and defining a packing area according the geometry of the packed space (i.e. the area is then designated as an area to pack images once an appropriate image of the defined size is found; see fig. 2; paragraphs [0012]-[0015]).

Therefore, in view of Shields, it would have been obvious to one of ordinary skill at the time the invention was made to defining a packing area comprises identifying a

geometry of a packed space and defining a packing area according the geometry of the packed space in order to check to see if a region is a sufficient size for an image to be placed (as stated in Shields paragraph [0014]).

Re claim 19: The teachings of Simon et al are disclosed above.

Simon et al teaches the method, wherein defining a packing area comprises identifying a packed space as rectangular (i.e. when looking at figure 2, it is clear that areas that will be packed with an image are or designated as rectangular; see fig. 2; paragraph [0048]), identifying left over spaces located diagonally, vertically, and horizontally relative to the packed space (i.e. when looking at figure 12, element 62 has left over spaces that are horizontal (273) and vertical (275) in relation to the packed space. Although identifying spaces diagonally is not specifically stated, it is performed by the device. When performing horizontal sorting, the packed space finds the next horizontal space and begins to pack that space with an image. If the next image that is chosen performs vertical sorting on the now second image process, it will identify the diagonal left over space of the first image that was processed horizontally in the beginning of whole horizontal process. Therefore, the feature of identifying the diagonal left over space is performed; see fig. 12 and 16; paragraphs [0063]-[0067]) and defining a second packing area as the remaining horizontal or vertical space (i.e. with horizontal and vertical sorting, a packing area or layout area can be defined as a horizontal or vertical space when performing the sorting process; see fig. 12 and 16; paragraphs [0063]-[0067]).

However, Simon et al fails to teach combining the diagonal space with either the vertical space or the horizontal space creating a combined space having a maximized small dimension, and defining a first packing area as the combined space.

However, this is well known in the art as evidenced by Shields. Shields discloses combining the diagonal space with either the vertical space or the horizontal space creating a combined space having a maximized small dimension (i.e. looking at figure 2, the space that is left over after placing an image into a certain space is may be combined with another space, depending on the image size the system had waiting to place on the overall image. Any region of left over space after placing a plurality of images can be combined with other pieces of free space left over to create a region to fit an appropriate sized image; see fig. 2; paragraphs [0012]-[0015]), and defining a first packing area as the combined space (i.e. depending on how the images are oriented, space that is left over after the first batch of images are placed is combined to form spaces that may be used to have smaller images placed on the combined spaces. In the invention, the space is used efficiently by not only placing images in decreasing height in the overall image, but also to use the spaces left over to place even smaller images. Although it does not specifically say defining a first packing area as a combined space, the feature is performed since spaces between the placed images are combined to form a region in which images can be placed; see fig. 2; paragraphs [0012]-[0015]).

Therefore, in view of Shields, it would have been obvious to one of ordinary skill at the time the invention was made to combining the diagonal space with either the

vertical space or the horizontal space creating a combined space having a maximized small dimension, and defining a first packing area as the combined space in order to check if the next image can be located in one of the openings between the other images (as stated in Shields paragraph [0013]).

Re claim 38: The teachings of Simon et al are disclosed above.

However, Simon et al fails to teach the method, wherein the instructions for defining a packing area include instructions for identifying a geometry of a packed space and defining a packing area according the geometry of the packed space.

However, this is well known in the art as evidenced by Shields. Shields disclose the instructions for defining a packing area include instructions for identifying a geometry of a packed space (i.e. the system checks to see if a region of sufficient size exists for the placement of an image. Any type of possible shape that is represented in figure 2 is recognized to see if the next available image can fit in the shape shown. Although instructions are not specifically disclosed, it is clear that the system performs the feature of checking for a certain size of a region to place another image. Also, since a computer or some program performs the function above, instructions have to be given to such a program to perform the above feature; see fig. 2; paragraphs [0012]-[0015]) and defining a packing area according the geometry of the packed space (i.e. the area is then designated as an area to pack images once an appropriate image of the defined size is found; see fig. 2; paragraphs [0012]-[0015]).

Therefore, in view of Shields, it would have been obvious to one of ordinary skill at the time the invention was made to have instructions for defining a packing area include instructions for identifying a geometry of a packed space and defining a packing area according the geometry of the packed space in order to check to see if a region is a sufficient size for an image to be placed (as stated in Shields paragraph [0014]).

Re claim 39: The teachings of Simon et al are disclosed above.

Simon et al teaches the method, wherein the instructions for defining a packing area include instructions for identifying a packed space as rectangular (i.e. when looking at figure 2, it is clear that areas that will be packed with an image are or designated as rectangular; see fig. 2; paragraph [0048]), identifying left over spaces located diagonally, vertically, and horizontally relative to the packed space (i.e. when looking at figure 12, element 62 has left over spaces that are horizontal (273) and vertical (275) in relation to the packed space. Although identifying spaces diagonally is not specifically stated, it is performed by the device. When performing horizontal sorting, the packed space finds the next horizontal space and begins to pack that space with an image. If the next image that is chosen performs vertical sorting on the now second image process, it will identify the diagonal left over space of the first image that was processed horizontally in the beginning of whole horizontal process. Therefore, the feature of identifying the diagonal left over space is performed; see fig. 12 and 16; paragraphs [0063]-[0067]) and defining a second packing area as the remaining horizontal or vertical space (i.e. with horizontal and vertical sorting, a packing area or layout area can

be defined as a horizontal or vertical space when performing the sorting process; see fig. 12 and 16; paragraphs [0063]-[0067]).

However, Simon et al fails to teach combining the diagonal space with either the vertical space or the horizontal space creating a combined space having a maximized small dimension, and defining a first packing area as the combined space.

However, this is well known in the art as evidenced by Shields. Shields discloses combining the diagonal space with either the vertical space or the horizontal space creating a combined space having a maximized small dimension (i.e. looking at figure 2, the space that is left over after placing an image into a certain space is may be combined with another space, depending on the image size the system had waiting to place on the overall image. Any region of left over space after placing a plurality of images can be combined with other pieces of free space left over to create a region to fit an appropriate sized image; see fig. 2; paragraphs [0012]-[0015]), and defining a first packing area as the combined space (i.e. depending on how the images are oriented, space that is left over after the first batch of images are placed is combined to form spaces that may be used to have smaller images placed on the combined spaces. In the invention, the space is used efficiently by not only placing images in decreasing height in the overall image, but also to use the spaces left over to place even smaller images. Although it does not specifically say defining a first packing area as a combined space, the feature is performed since spaces between the placed images are combined to form a region in which images can be placed; see fig. 2; paragraphs [0012]-[0015]).

Therefore, in view of Shields, it would have been obvious to one of ordinary skill at the time the invention was made to combine the diagonal space with either the vertical space or the horizontal space creating a combined space having a maximized small dimension, and defining a first packing area as the combined space in order to check if the next image can be located in one of the openings between the other images (as stated in Shields paragraph [0013]).

10. Claims 20 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon et al in view of Doi et al (US Pat No 6208360).

Re claim 20: The teachings of Simon et al are disclosed above.

Simon et al teaches the method, wherein identifying a packing area comprises identifying a packed space (i.e. in the layout of the images in figure 5, the area where the image will be placed in identified either automatically or manually; see fig. 5; paragraphs [0049]-[0055]), maximizing a jagged space (i.e. shown in figures 8-10 are examples of the system maximizing the use of spaces that may appeared to be jagged or not completely rectangular. Through normalizing and scaling, the jagged spaces in figure 8 are maximized by the previous stated methods and is illustrated in figures 9-12; see figs. 8-12; paragraphs [0049]-[0055]), identifying remaining spaces that are located vertically and horizontally relative to the packed space (i.e. in fig. 16, the blank or white spaces located horizontally and vertically of the packed spaces are identified; see fig. 12 and 16; paragraphs [0063]-[0065]), defining a first packing area as the maximized

jagged space (i.e. in figure 14, a crosshatched region is present. This region with the surrounding blank region around the crosshatched region is considered as a jagged space. The user is utilizing this space in this arrangement, but can multiple different arrangements. However, this can be considered as the first packing area as the maximized jagged space since it is being used to pack some type of data and the crosshatched region is a large region being used in figure 14; see fig. 14; paragraph [0067]), defining a second packing area as the left over vertical space (i.e. in using the method of figure 16, an area is defined as the vertical white space or the space above or below the packed space; see fig. 12 and 16; paragraphs [0063]-[0065]), and defining a third packing are as the left over horizontal space (i.e. in using the method of figure 16, an area is defined as the horizontal white space or the space to the left or right of the packed space; see fig. 12 and 16; paragraphs [0063]-[0065]).

However, Simon et al fails to teach identifying a packed space as irregular.

However, this is well known in the art as evidenced by Doi '360. Doi '360 discloses identifying a packed space as irregular (i.e. when viewing a 3D image, the irregularity of the shape is recognized by a distance measuring device; see col. 3, lines 52-58).

Therefore, in view of Doi '360, it would have been obvious to one of ordinary skill at the time the invention was made to identifying a packed space as irregular incorporated in the device of Simon et al in order to recognize the irregularity of an image (as stated in Doi '360 col. 3, lines 52-58).

Re claim 40: The teachings of Simon et al are disclosed above.

Simon et al teaches the method, wherein the instructions for defining a packing area include instructions for identifying a packed space (i.e. in the layout of the images in figure 5, the area where the image will be placed in identified either automatically or manually; see fig. 5; paragraphs [0049]-[0055]), maximizing a jagged space (i.e. shown in figures 8-10 are examples of the system maximizing the use of spaces that may appeared to be jagged or not completely rectangular. Through normalizing and scaling, the jagged spaces in figure 8 are maximized by the previous stated methods and is illustrated in figures 9-12; see figs. 8-12; paragraphs [0049]-[0055]), identifying remaining spaces that are located vertically and horizontally relative to the packed space (i.e. in fig. 16, the blank or white spaces located horizontally and vertically of the packed spaces are identified; see fig. 12 and 16; paragraphs [0063]-[0065]), defining a first packing area as the maximized jagged space (i.e. in figure 14, a crosshatched region is present. This region with the surrounding blank region around the crosshatched region is considered as a jagged space. The user is utilizing this space in this arrangement, but can multiple different arrangements. However, this can be considered as the first packing area as the maximized jagged space since it is being used to pack some type of data and the crosshatched region is a large region being used in figure 14; see fig. 14; paragraph [0067]), defining a second packing area as the left over vertical space (i.e. in using the method of figure 16, an area is defined as the vertical white space or the space above or below the packed space; see fig. 12 and 16; paragraphs [0063]-[0065]), and defining a third packing are as the left over horizontal

space (i.e. in using the method of figure 16, an area is defined as the horizontal white space or the space to the left or right of the packed space; see fig. 12 and 16; paragraphs [0063]-[0065]).

However, Simon et al fails to teach identifying a packed space as irregular.

However, this is well known in the art as evidenced by Doi '360. Doi '360 discloses identifying a packed space as irregular (i.e. when viewing a 3D image, the irregularity of the shape is recognized by a distance measuring device; see col. 3, lines 52-58).

Therefore, in view of Doi '360, it would have been obvious to one of ordinary skill at the time the invention was made to identifying a packed space as irregular incorporated in the device of Simon et al in order to recognize the irregularity of an image (as stated in Doi '360 col. 3, lines 52-58).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shields (US Pub No 2003/0163786), which was used as a 103 reference on claims 18, 19, 38 and 39, is also readable on the claims that disclose selecting digital images, opening, continuing and closing of a trial pack. In addition, the above reference reads on the claims that disclose defining a packing area, determining

a digital image that has yet to be packed and packing a digital image of a certain size in multiple orientations.

Tonomura et al (US Pat 6571054) reads on the claims that state the feature of designating a packing area, determining an image that has yet to be packed and filling the packing area with the image or images in multiple orientations and multiple layouts or trial packs. It also reads on the features of generating multiple trial packs, comparing the trial packs and selecting the trial packs based on the comparison.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad Dickerson whose telephone number is (571)-270-1351. The examiner can normally be reached on Mon. thru Thur. 9:00-6:30 Fri. 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571)- 272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CD/
Chad Dickerson
May 8, 2007

AUNG S. MOE
SUPERVISORY PATENT EXAMINER
5/11/07